CLAIMS

1. A protein drug sustained-release microparticle preparation for injection, characterized by comprising a porous apatite or derivative thereof containing a protein drug, coated with or adhered to, an in vivo disappearing polymer.

2. The protein drug sustained-release microparticle preparation for injection according to claim 1, characterized in that the in vivo disappearing polymer is a block copolymer consisting of polyethylene glycol and polylactic acid or copolylactic-glycolic acid.

3. The protein drug sustained-release microparticle preparation for injection according to claim 2, characterized in that the block copolymer consisting of polyethylene glycol and polylactic acid or copolylactic-glycolic acid is a block copolymer consisting of polylactic acid or copolylactic-glycolic acid-polyethylene glycol-polylactic acid or copolylactic-glycolic-acid.

4. The protein drug sustained-release microparticle preparation for injection according to claim 2, characterized in that the block copolymer consisting of polyethylene glycol and polylactic acid or copolylactic-glycolic acid has a weight-average molecular weight of 3,000 to 20,000.

5. The protein drug sustained-release microparticle preparation for injection according to claim 2 or 3, characterized in that the block copolymer consisting

of polyethylene glycol and polylactic acid or copolylactic-glycolic acid has 20 to 90% by weight of polyethylene glycol.

6. The protein drug sustained-release microparticle preparation for injection according to claim 1, characterized in that the porous apatite or derivative thereof contains a protein drug and a divalent metal salt.

7. The protein drug sustained-release microparticle preparation for injection according to claim 1, characterized in that the porous apatite or derivative thereof has a protein drug content of 5 to 30%.

8. The protein drug sustained-release microparticle preparation for injection according to claim 1, characterized in that the porous apatite or derivative thereof has an average particle size of 0.5 to 30 μm.

9. The protein drug sustained-release microparticle preparation for injection according to claim 1, characterized in that the porous apatite or derivative thereof is treated in the range from 100 to 600°C.

10. The protein drug sustained-release microparticle preparation for injection according to claim 1, characterized in that the porous apatite or derivative thereof is an apatite derivative in which a portion of calcium in the porous apatite is substituted with zinc.

11. A process for producing a protein drug sustained-release microparticle preparation for injection, characterized by comprising dispersing microparticles of a

porous apatite or derivative thereof in an aqueous solution of a protein drug, stirring the dispersion, dispersing the resulting powder in an aqueous solution or suspension of a biodegradable polymer, stirring the dispersion, and then freeze drying or vacuum drying to give a powder.